CW/HW#99: interior & Exterior Angles of a Polygon

Honors Geometry  
Due: Tuesday, March 22nd, 2016

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP:\_\_\_\_\_

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| YWBAT determine the sum of the interior angles of a polygon. | | |
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| 2. For each polygon, compare the number of triangles to the number of sides. Explain the pattern you see. | | 3. How does the number of triangles created by the diagonals in each polygon determine the sum of the interior angle measures in a polygon? |
| 4. What is the rule for determining the sum of the interior angles? | | |
| 5. Find the sum of the measures of the interior angles of a 23-gon. Show your work. | 6. Find the number of sides of a polygon whose interior angles add up to 3240°. | |
| 7. What is the measure of one interior angle in this equiangular heptagon? How do you know?  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.28.51 PM.png | | |

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| YWBAT find the interior and exterior angles of a polygon. | | |
| 8. What is the sum of the exterior angles?  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.32.58 PM.png | 9. What is the sum of the exterior angles?  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.32.58 PM.png | 10. What is the sum of the exterior angles?  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.32.58 PM.png |
| 11. What did you notice about the exterior angles of all polygons? | | |

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| 12. Solve for x.  *x* | 13. This is a regular hexagon. Solve for x.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.39.16 PM.png |

For each polygon, solve for x and y.

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| 1.  2*x*  3*x*  4*x*  2*x* | 2.  2*x*  84°  2*x*  110° |
| 3.  2*x*  3*x*  *x* | 4.  4*x*  5*x* + 20  5*x* – 10  3*x* + 10 |
| 5.  5*x*  4*x* + 2  5*x* + 6  2*x* – 2  3*x* + 5  *x* – 10  2*y* | 6. This is a regular hexagon.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.42.39 PM.png |

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| 7. An exterior angle of an n-sided polygon has a measure of 60°. How many sides does the polygon have? | 8. If the sum of the interior angles of a regular polygon is 1440°, find the measure of one exterior angle. |
| 9. How many sides does a regular polygon have if each interior angle has a measure of:   |  |  | | --- | --- | | a) 60° | b) 156° | | c) 90° | d) 140° | | |
| 10. Label all angles. Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.48.34 PM.png | 11. This is a regular pentagon. Solve for x.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-03-13 at 10.42.46 PM.png |